(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
22 February 2001 (22.02.2001)

PCT

(10) International Publication Number
WO 01/13201 A3

(51) International Patent Classification[7]: H04L 29/06, G06F 1/00

(21) International Application Number: PCT/US00/21965

(22) International Filing Date: 11 August 2000 (11.08.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/148,624 12 August 1999 (12.08.1999) US
Not furnished 4 August 2000 (04.08.2000) US

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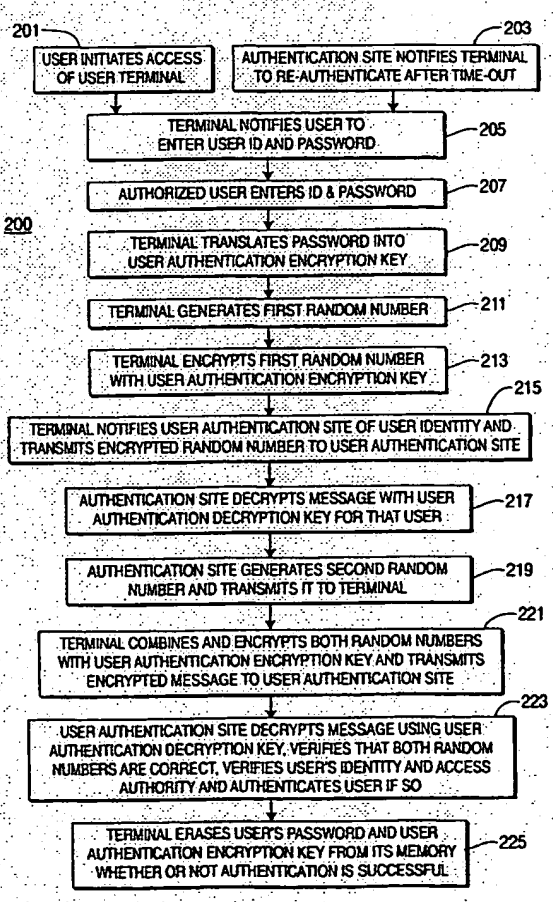
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: PEER-TO-PEER NETWORK USER AUTHENTICATION PROTOCOL



(57) Abstract: In a peer-to-peer network having a plurality of user terminals, each capable of serving as a user authentication site for other terminals of the network and having an open side of a firewall and a secure side of the firewall, a method for authenticating a user. A user authentication database is stored in memories in the secure side of first and second terminals of the network. The first terminal receives a password from the user, and translates the password into an authentication encryption key for the user. The first terminal generates a first random number, encrypts the first random number with the authentication encryption key to provide a first encrypted message, and transmits the first encrypted message to the second terminal, which serves as a user authentication site for the first terminal. The user authentication site decrypts the encrypted first message to provide the first random number, and generates a second random number, which is transmitted to the first terminal. The first terminal combines and encrypts the first and second random numbers, with the authentication encryption key, to provide a second encrypted message. The first terminal transmits the second encrypted message to the user authentication site, which decrypts the encrypted second message to provide the combined first and second random numbers. The user authentication site verifies that the first and second random numbers are correct, and authenticates the user in accordance with this verification.

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IT, LU, MC, NL, PT, SE). OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

(88) Date of publication of the international search report:
6 December 2001

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Inter ional Application No
PCT/US 00/21965

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L29/06 G06F1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KWON T ET AL: "Authenticated key exchange protocols resistant to password guessing attacks" IEE PROCEEDINGS: COMMUNICATIONS, INSTITUTION OF ELECTRICAL ENGINEERS, GB, vol. 145, no. 5, 13 October 1998 (1998-10-13), pages 304-308, XP006010921 ISSN: 1350-2425	1,2,5,9
Y	page 305, left-hand column, paragraph 3.1 -page 307, left-hand column, paragraph 36	7,8
A	---	3,4
Y	WO 95 24698 A (BULL CP8) 14 September 1995 (1995-09-14)	7,8
A	page 5, line 11 - line 15 page 6, line 16 -page 7, line 14	6
A	page 24, line 17 -page 26, line 8	3,4
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[X] Further documents are listed in the continuation of box C. [X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
16 August 2001	23/08/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Karavassilis, N

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PCT/US 00/21965

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 406 628 A (BELLER MICHAEL J ET AL) 11 April 1995 (1995-04-11) column 14, line 30 - line 56	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

Intr ional Application No
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